

Mobile Application for Learning Siamese Buddhism

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the Business Information
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Approved by,

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UNIVERSITI TEKNOLOGI PETONAS TRONOH,

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May 2015

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein has not been undertaken or done by unspecified sources or persons.

SAXKKRIN ADINAN A/L IRIP

Abstract

Malaysia have been known as the country with variety of race such as Malay, Indian, Chinese, Bidayuh, Siamese and etc.. . Siamese in Malaysia is minorities race that always being neglected. Based on the recent statistics, there are about 51 000 Malaysians identified, belongs to the Siamese race. Siamese race is identified as a group of people that practice the Siam ways of life and also practicing Theravada Buddhism which is difference from Mahayana Buddhism that been practicing by Most Chinese. The place of worship in Theravada Buddhism is called Wat and there are about 70 Wat in Malaysia.

In the 21st century, the number of Generation Y of Siamese is increasing and most of them migrate to the city to find a job opportunity. Lacks of exposure rate on Siamese Buddhism to the Gen Y of Siamese community have created the problem where the knowledge of Siamese Buddhism is slowly diminished from the Gen Y of Siamese. The objective of this research is therefore to solve the above-mentioned issues by developing an Android based mobile application for helping the Siamese Community to easily learn about the Siamese Buddhism. In addition people also have difficulties to find Wat locations, which are scattered in Malaysia. The research method used will be exploratory and constructive which gathered data such as survey and interview the expert and provide solutions based on the problem defined. Eventually, a mobile application to provide learning content Theravada Buddhism and Wat locations in Malaysia will be developed

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First and foremost, I would like to take this opportunity to extend the utmost gratitude to those who have contributed either directly or indirectly for their continuous support and contribution in completing this Final Year Project. These seven months experience had given me an opportunity to learn something new and embrace the challenge that has been given to me.

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CHAPTER 1: INTRODUCTION

1. Introduction

1.1 Background of study

Technologies these days are growing rapidly as its force the educators to apply the digital information and technology in their teaching (Wan Malini & et.al. 2010). For that reason smart phones are widely used by the people and have becoming as a trend. The use of smart phones not only limited from making normal but they also can be use as managing business online. Smart phones are also being exploited to assist education. In 21st century, the choice was clear smartphones have dominating others technologies such as laptops as medium for education learning (C.Norris, 2011). Android phone is one of the most popular smart phones running on Android operating system. Many applications are developed on Android phone, including mobile game - based learning application as a tool to educate the students and enhance the efficiency of learning and can become a compliment to traditional way of learning.

When it come to the learning about the Siamese Buddhism in Malaysia, there are insufficient sources and also no technology that have been develop to help Siamese community in learning the Siamese Buddhism. Siamese community in Malaysia is one of the minority races in Malaysia, therefore the information about Siamese in Malaysia is difficult to obtain. In order to learn about Siamese Buddhism in Malaysia, we need a lot of references through the community itself which author believe not all have been codify. Learning Siamese Buddhism on mobile devices for Siamese community, using Android operating systems combines these two elements to provide an efficient and mobility of learning toward the users (Siamese community).

As until today, there are no such applications in Malaysia to help Siamese community to learn and understanding the basic concept of teaching of Siamese Buddhism in Malaysia. According to World Bank Malaysia, with 140 per cent mobile penetration, is

leading Indonesia, Thailand and even United States! Only Singapore and Vietnam in Southeast Asia have higher mobile penetration than Malaysia. Device research has also presented a breakdown of smartphone OS in Malaysia, with Android leading with 65 percent, followed by iOS and Windows (Google, 2013), (McCan2013), (Euromonitor, 2013). By using the Android based mobile application which is dominant in Malaysia, will help Siamese community in Malaysia to get access of learning of Siamese Buddhism easily. The purpose of this project is to come out with Android based mobile application prototype that will help the Siamese community especially gen Y in Malaysia.

1.2 Problem Statement

Malaysia is well known as a country, which have variety of race and religion. Majority of Race in Malaysia is Malay and Islam as official religion for this country. Siamese in Malaysia is one of the minority race in Malaysia which mostly can be found hugely in number at Kedah, Perlis, Kelantan and Perak. Insufficient sources to learn about Siamese Buddhism in Malaysia is one of the main factor that derived author to develop the apps. Most of Siamese in Malaysia live in rural area such as at border of Thailand , Tumpat ,Baling ,Pengkalan Hulu and etc. . Some of them still practicing the traditional way of life hence it will make the knowledge hard to codify into a proper form.

In Malaysia there are plenty of Wat, which is 70 in total. Siamese Buddhism (Theravada sect) reflects Wat as the place for praying and performs any religious ritual in Buddhism. As the fundamental component in Siamese Buddhism, Wat have been one of the important component for them, therefore limited knowledge about location of Wat in Malaysia had become a crucial problem to the Siamese community. As stated by (about.com, 2015) Gen Y is an attention craving. Gen Y crave attention and have high ambiguous which lead them to move out for better achievement. Apart from that statement, Most of Gen Y Siamese have been travelling throughout Malaysia. As today, they still struggle and have lack of information of location of Wat in Malaysia.

Buddhism in the world mainly consists of two sects, Mahayana and Theravada. Both of sects dominating certain region in this world. Mahayana tradition is the largest major tradition of Buddhism existing today with 53.2% of practitioners, compared to 35.8%

for Theravada and 5.7% for Vajrayana in 2010. (wikipedia,2015). Siamese Buddhism in Malaysia apply Theravada sect but some of Buddhism in Malaysia is still confusing and misconceptions between Buddhism sect in Malaysia (Theravada) and others countries (Mahayana) such as China. There's a famous Peanutscartoon where Linus says "You believe in Santa Claus, I believe in the Great Pumpkin ... It doesn't matter what you believe as long as you're sincere." Many writers seem to hold a similar view, as typified by Young (2001). Religion is not ignorance. It is not ridiculous superstition. It is not defined by hatred or by antagonism to any other field of human endeavor. It is merely faith in something greater, in something beyond us that we cannot explain or control (S.Longworth, 2012). Religious misconceptions are the most crucial things as it's reflecting the religion teaching itself. Person A might give out different fact from Person B, without any proper sources and channel, the understanding and teaching will be different from time to time.

1.3 Objectives of study

Siamese Buddhism mobile application assists the Siamese community to learn and understand the basic concept of Siamese Buddhism in Malaysia. The objectives of this project are:

1. Compile the relevant information pertaining Siamese Buddhism In Malaysia
2. Study and analyze the requirement for developing Android based mobile application to address the needs learning Theravada Buddhism of generation Y Siamese community in Malaysia.
3. Design and develop the mobile application incorporating objectives 1 and 2
4. Validate and test the application developed in objective 3

1.4 Scopes of study

The main component	Mobile apps targeted users	Development platform
This scope involving the study of Siamese Culture, basic concept of Siamese Buddhism in Malaysia	Generation Y of Siamese community in Malaysia	<ul style="list-style-type: none">• Android OS• Android Studio• AppInventor• FluidUI

1.5 Relevancy of study

1. User

This research will help the user to reduce the burden of learning Siamese Buddhism from a limited sources. Besides, this mobile apps able to help user in term of finding Wat locations in Malaysia.

2. Society

According to MD Rashedul (2011) Mobile Application uses and development is a new and is a rapidly growing sector. With this study, it able to evoke the Siamese society to use the application in their smartphone. Apart from that, this mobile app also able to help Siamese society to learn Siamese Buddhism in a easy way as the smartphone are now growing wide.

3. University and Research Society

Author believes that, this research will able to help the university directly or indirectly as the mobile apps that being develop by author is none existed in the Mobile Application market. With this advantage in hand, the University able to take the opportunity to exploit more in this particular areas as it is new areas and can be manipulated to others field.

4. Researcher

Researcher background was in Business Information System, the combination of Business and IT. Author is expected to produce a mobile app to encounter the entire problem listed. The study is relevant because author able to learn deeply about the Siamese Buddhism in Malaysia which can be said as limited in term of knowledge. Next, author able to gain some knowledge in collecting information from Gen X of Siamese in Malaysia.

1.6 Feasibility study

In the research, feasibility study is important because it enable us to determine the possibilities of the project whether it is able to success or failed. Feasibility function as the component that able to smoothen the development cycle of study. There are 5 types of feasibility consist of technical, economic, organizational, scope and time.

Technical Feasibility

Based on the technical feasibility, the study is feasible. The technical part in this project only occur at development / implementation phase. In this part, all the coding is involved. Based on past subject which were taken by the author, author have gain the programming knowledge and able to apply it in developing the system.

Economic Feasibility

Based on the economic feasibility, author believed that the cost of developing the project is low. With the hardware and software that being used by the author, the cost involve only be the cost of transportation from UTP to Baling (Hometown) as the author need to codify all the necessary information from expert. Another prototype cost that may incur is the cost of printing the necessary things regarding to the study.

Scope Feasibility

The study of Siamese Buddhism is limited but can be achieved by the author. The scope of area of research is mainly in Peninsular of Malaysia but it focus only at Kedah, Perlis, Kelantan and also Perak which have the highest population of Siamese community. Besides that, the scope of study for this project is more focus on Siamese Buddhism in Malaysia. The scope is niching enough, as Siamese Buddhism is majority practice by most of the Siamese, which make it achievable to meet the objective of study.

Time Feasibility

Collections of data normally are done before the start of analysis phase. In the analysis phase author will use Microsoft Excel software and research on the past work can be done easily through Internet search which is more time saving. In the development phase, author will be using AppInventor, FluidAp to design the Graphical User Interface by drag and drop method. With the time constraint of 8 month, it is expected to meet the scheduling that have been made.

CHAPTER 2: LITERATURE REVIEW

2. Literature review

2.1 Introduction

Malaysian Siamese community is found in northern part of Malaysia. They are one of the minority groups that live as part of Bumiputera like Malays, Kadazan-Dusuns, Iban and Malaccan Portuguese. They have adopted with the culture and traditions in Malaysia. The Siamese community that can be found in northern states of Malaysia is Kedah Kelantan, Terengganu and Perlis. Kedah and Kelantan are well known with the border area to Thailand. The Siamese peoples are mostly Buddhist. Siamese in Malaysia is one of the minority races that adapt a unique culture and religion. With this advantage in hand author have exploit the opportunity to further make a research on the learning of Siamese Buddhism through mobile apps.

Below is the literature review to support the study that currently author working on .For the first point, author will explain about the needs to have a mobile application for learning Siamese Buddhism. Then, the second point will be explaining about the Mobile learning (M - Learning) which become a trend in nowadays world. Next, author will stretch on the technology use in learning religion. Last but not least, author will elaborate on the function of mobile apps in strengthen the religions knowledge.

2.2 The needs to have Mobile apps for learning Siamese Buddhism in Malaysia

With the rapid development of information technology and the internet, the market of mobile application field becomes broader and more application software emerges , but the real key needs for users is the key to the development of application software . With population of 51 000 of Siamese in Malaysia, none of Siamese Buddhism apps have been developed.

For Siamese in Malaysia, Mobile apps for learning Siamese Buddhism are a need. With the minor number of Siamese population in Malaysia, they are having difficulties to obtain any information or content regarding to Siamese Buddhism. With the increasing of Gen Y, and decreasing the number of Gen X and baby boomers, the flow of knowledge and information on the Siamese Buddhism between those 2 generation are getting lower and lower. Therefore, to cater the problem, Mobile apps have become a need in this particular matter. Apart from that, Mobile apps have become an essential and common things to the smartphone user, which are widely, use nowadays. Via mobile apps, it can create an ease of use to the Siamese population whereby they can access the information and do the learning from any place and times.

In 1960s, Siamese have been labeled as "the poor " and "the new village settlement" (Keiko Kuroda, nd) which most of them are located in bandit area. After 1960s Siamese population have moving forward in tune with the technological changing but still, most of the Siamese are in rural area such as Pendang, Baling , Pengkalan Hulu and etc. With the development of mobile apps for learning Siamese Buddhism, the information about the Siamese will be codified into the mobile apps which creating the high accessibility to Siamese community to learn their religion.

Moving up to the 21st century, most of the Siamese population especially Gen - Y have migrate out from their village to the city to find job opportunity and looking for better life. Siamese are now scattered all over Malaysia hence, creating a difficulties for them to learn and find the place (Wat) to pray or to perform Buddhism ritual. One of the features of "Learning Siamese Buddhism mobile apps" is to allow users to get the map for the exact location of Wat all over the Malaysia. With the Map functionality, users able to get the exact location without go through such a complicated procedure to locate the Wat .

2.3 M-Learning

M - Learning can be defines as the process of transferring learning content from sender to receiver by using mobile computing devices (Traxler J. 2007). Nowadays, the use of

mobile computing devices is getting common from days to days. According to Chris-kuo et al.(2008) , the growing trend in utilizing technologies in education are now taking action massively. The use of mobile devices is becoming a trend and it's have change the attitudes towards using mobile devices in learning. In the 21st century the education system are willing to acknowledge the use of mobile devices as learning tools (Lorenzo R. D., 2013). Before the existing of M-learning there was E-learning which now have become very inconvenient apart from the continuity, M - learning have taking place as one of the new way of learning. The increasing number of mobile users becomes an opportunity for M-learning. M learning complements E-learning since there is rapid development and technological advancements of wireless technologies with growing number of mobile users (R. Benlamri et al., 2006).

In the process of developing M-learning tool, there are some criteria that need to be taking into granted which is availability, group and broadcast discussions broad community, broad community support, capable for heterogeneous devices, one-on-one communication and decentralized information sharing (Stieglitz S. et al., 2007). Availability in M-learning context can help the user to access the learning content anywhere, anytime and also will provide an excellent mobility to them. Apart from that, adaptively of learning also need to be consider (T. T. Goh et al., 2003). In addition, the main architecture of M -learning is based on their individual experiences, where the user have a flexibility to choose where and when they want to do the lessons.

According to B.W.Wirtz. (2000), M-learning did not deprives traditional learning promotes user/students to work in group and in inadvertently it will give more impact to the user/students compared to individual learning via network (B. W. Wirtz, 2000). Communication can be develop when an individual share or transfer knowledge that they gain from mobile learning. Besides that, M-learning can facilitate user in learning very well. Development of M-learning will have to consider the meaningful learning content is delivered in dynamic and motivating way (Luciana, 2011).

2.4 Technology for learning religion

“The widespread use of mobile phones [and other mobile devices] enables a long awaited dream: learning at any place, at any time.” (N.Maniar, p.307). Modern technology such as computer, cell phone and smart phone has been utilized in learning religions. In today world, the usages of cell phone have been widely spread and it has been a trend. Align with that trends, high number of expert’s agreements in the integration of ICT in religion's learning will be very important. Usage of technology in learning Siamese Buddhism mobile apps will be beneficial as most of the Gen Y is now familiar with the technologies. By taking the opportunity to exploit in this particular area, it can create a convenience to the users. A survey that been done by PriceWaterHouseCoopers have proven that Gen y desire and expect to be mobile throughout their career lifetime. They also independent, and value the flexibility to balance between work and personal life, They aspire to develop themselves in a variety of roles and organization’s Issues of sustainability and climate change are of major concern, and will affect their career choices (PWC, 2009). That citation shows that, Gen Y tend to migrate from one place to another, and the growing of mobile phones as a need have evoke the relevancy of mobiles apps in learning religions

Nowadays, mobile technologies are found to be less expensive than the standard equipment such as PC (personal computer). The portability of cell phones brings another benefit and users can utilize the portability of the cell phones to learn the religions in their own free time. Using smartphone as a medium of learning religions have created a few challenges such as screen sizes are smaller which provides limited audio-visual quality, virtual keyboarding and one-finger data entry and also limited power. Two underlying reasons why screen size is a problem are human visual perception and attention (N.Maniar, 2008). Human visual perception limits the level of small detail they can see which also affects their attention span. A study carried out by Knoche et al. (2006) suggested that screen size affects the viewer’s quality of experience i.e. visual perception and attention, when delivering television programs on a mobile phone. The learning process will be limited from these challenges.

Technology has allowed people to have another alternatives to learn religions rather than hiring a tutor or attending class. With the wide grown of technology such as mobile phone and computer, people are able to access the teaching programmed at any time based on the users pace themselves.

2.5 Mobile apps for religion's knowledge strengthen

Malaysia is well known as a country with a variety of Race. Siamese is one of the minority race in Malaysia Siamese have been in Tanah Melayu a long time ago. Siamese also can be known as “Siamese Malaysian” or “Thai Malaysian” it is the term commonly referred to Malaysians of Thai ancestry. In Malaysia Siamese have been recognize as Bumiputeras and are given the similar status as Malays, Bruneis ,Kadazan - Dusuns , Ibans and Malaccan Portuguese. (Wikipedia, 2015). Most of Malaysians Siamese are Buddhism. Throughout Malaysia, there are 51 000 Siamese population all over the peninsular Malaysia which can be categorized as minority in Malaysia.

According to The Nielsen Company's monthly surveys from July - September 2010, consumers planning on getting a new smartphone had every clear preference. From the observation made, 33% want an iPhone, 26% want a smartphone with Android based and another 13% want a Blackberry. (The Neilsen Company, 2015) . After a few years, Android have become the top from others platform. Below figures shows the recent smartphone market share.

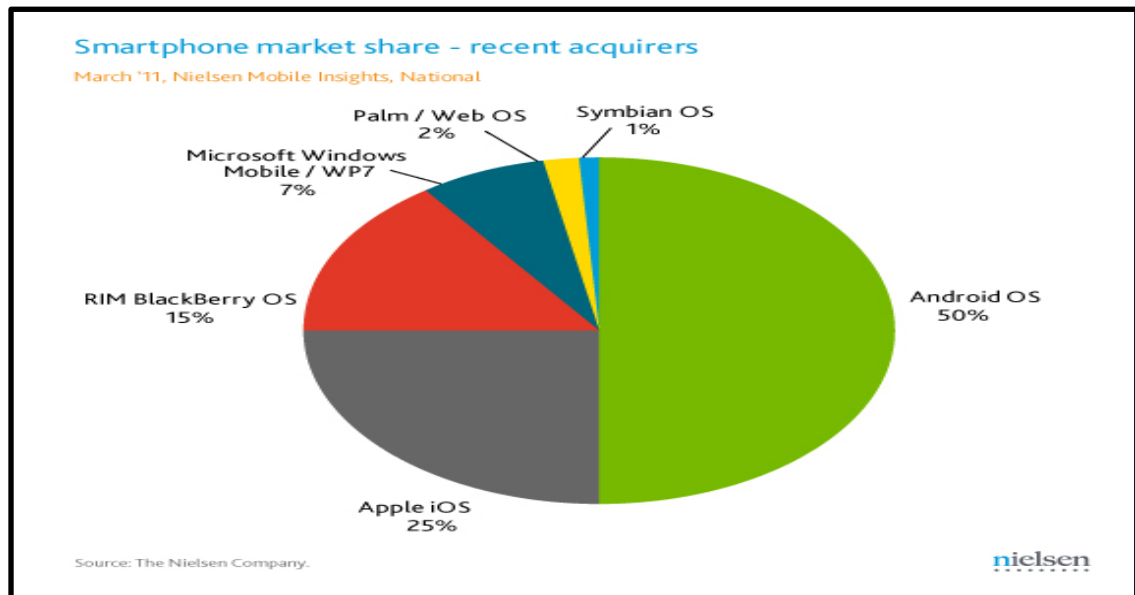


Figure 1: Smartphone market share

Based on the statistics shown above, author can conclude that Android have been dominating the market share recently. Choosing Android based as the development platform is a great opportunity to be exploit, as Android based OS is now dominating the market share of world of smartphone.

2.6 Conclusion

Based on this research, there is none of the current existing systems or applications related to Learning Siamese Buddhism in Malaysia. Most of the applications that exist in market are generally Buddhism apps, which only involve the bigger scope of Buddhism, which is different from the author's apps. Therefore, it can be conclude that it is a totally new approach in Malaysia to have such application, which directly will give impact towards Siamese community in Malaysia.

CHAPTER 3: METHODOLOGY

3. Methodology

3.1 Research Methodology

In this chapter, author will explain and elaborate more about the methodologies that being use throughout this project. The chapter consists of two sections, which system methodologies and research methodologies that have been use to collect the data. The author has chosen Rapid Application Development (RAD) as the development method meanwhile, for the research methodologies interview, observation and questionnaire have been conducted.

3.1.1 Questionnaires survey

Questionnaire surveys have been distributed among the Siamese community and a group of 100 potential consumers' feedback have been collected and analysed. The survey is conducted through online in a Google form that been distributed to Persatuan Siam Malaysia Facebook groups. The survey consists of 8 close-ended questions.

3.1.2 Interview

Apart from that, an interview has been conducted as the president of Persatuan Siam Malaysia, has been interviewed with a set of open-ended questions to further understand the requirement needed.

3.2 System Methodology and Project activities

Rapid Application Development or known as RAD have been chosen as the development method for this project. RAD can be defines as alternatives to the conventional Waterfall model of software development as well as the name for James

Martin's approach to rapid development. Rapid means fast and it also reflect the task list and work breakdown which designed for speed. Due to the limited time, author has made a decision to use RAD in order to get the project done. Only 28 week / 7 month have been given to author in order to develop the product from scratch. Another reason that influence author to use this method is due to narrow scope of study, an individual project, the need of uncomplicated data, few decision maker and also existing technology components. Besides that, there are no pre - planning is done hence its allow author to modify or make changes of any requirement throughout the development process. Rapid Application Development consists of requirements gathering, prototyping, testing and development of the product as illustrated in figure 2.

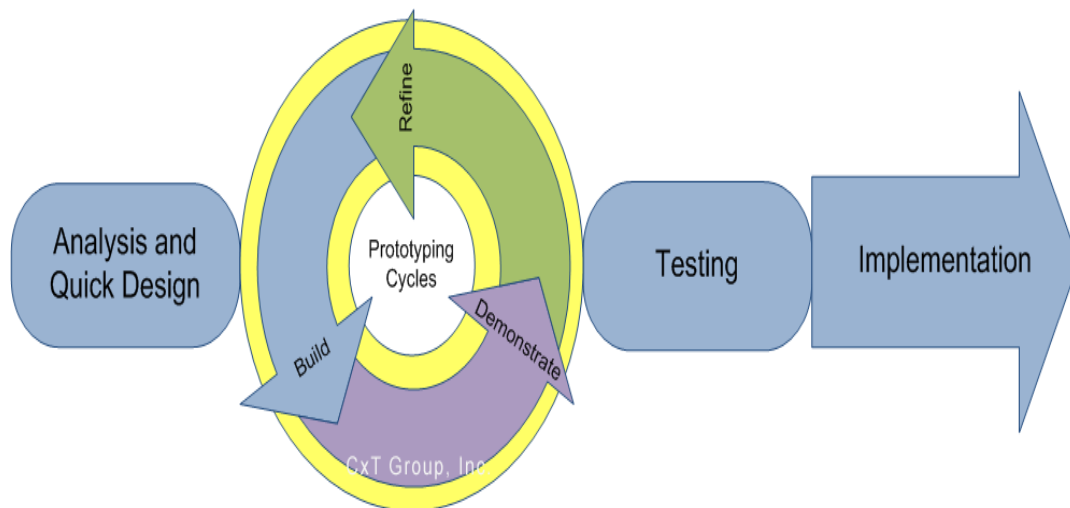


Figure 2: RAD

Planning phase

In this phase, author is required to propose a topic for the project. The project then needs to be submitted to the coordinator in order to get the approval. If the approval is decline the author need to came out with others topic, which is more relevant. If the approval of the topic have been granted, author need to identify the problem which related to the project. A project needs to have a certain problem in order to become a successful project. After the problem is being clearly defined, the author need to came out with the objective of developing the project. Author also needs to come out with the scope of studies in order to determine which is the target of the apps to be develop for.

Author then need to come out with a proposal, which need to be review by research supervisor. Prior moving to the project finalization, a discussions need to be done between author and research supervisor in order to avoid unnecessary things to be happen which able to lead back to planning phase. Next, pre - feasibility in perspective of technical, economic, organizational, time and scope need to be done. If one the feasibility is not met, the project objectives and scope need to be reviewed. At the end of planning phase author need to do literature review by doing online research or analyzing the past research. Last but not least, author need to came out with specific schedule / milestones which to be achieved.

Analysis Phase

Moving up to the analysis phase, author are required to gather necessary information regarding to requirement that obtain from the user point of view. Although author has done the literature review which consist of online research and may prove the relevancy of the project. By gathering all the necessary information from user, we may get a clearer picture of the study and able to identify the problem throughout the study.

A qualitative method was used in this study is by doing face- to - face interview, observation and questionnaire. Qualitative data is used as an explanatory study to explain how and why the current study is important. Using this technique author has to interview the expert in Siamese Buddhism. Throughout the interview process author able to identify that not many people have expertise in Siamese Buddhism. This interview process take place at Kg Simpang Empat, Baling , Kedah which mainly the author's hometown. After the interview process, questionnaires were distributed online to the some of Siamese Generation Y. After all the information is collected, author need to analyze all the gathered information and list out what is the system requirement need to be executed in the design phase.

Design Phase

Design phase can be define as the interaction with systems analysts and develop models and prototypes that represent all system processes, inputs, and outputs. In the design phase, the author will start modeling by designing the activity diagram and will be supported by use case diagram. Those two diagrams will be used to design the database, class and the algorithm, which will be use in the mobile apps. In designing the prototypes, AppInventor will be use. AppInventor is the visual drag and drop tools for building mobile apps on android platform, which enable the user to design their own interface. Through AppInventor or FluidUI, user can design/inserting any function .The time consuming in designing the Graphical User Interface using this application is a lot faster compared to the common Android App Compilers. By using AppInventor or FluidAp , its allow the flexibility in page design to be customize into certain shape or written in any words . Normally at the end of the design phase, authors need to submit the report regarding to the project to the research committee upon deploying the project.

Testing phase

In the testing phase, the application will be tested in term of its function and accuracy to produce the result. This method will help author to validate the effectiveness of the application. In the testing phase, author decided to use two testing method, which is user testing and functionality testing. Usability testing is a technique that used in user - centered interaction design to evaluate a product by testing it on users. This can be seen as an irreplaceable usability practice, since it gives direct input on how real users use the system. Via user testing author able to identify any error that make user dissatisfied with the mobile apps that been develop and able to change the things that need to be done without waiting until the end of the deployment period. Functionality testing will be conducted the testing of the functions of component or system is done. It refers to activities that verify a specific action or function of the code. Functional test tends to answer the questions like “can the user do this” or “does this particular feature work”. This is typically described in a requirements specification or in a functional specification.

Implementation phase

Implementation is the fourth stage of the Rapid Application Development (RAD). At the end of Final Year Project 2 (FYP2) the project are ready to be implement. After the information about the project has been gathered (testing result, testing activities) and if there are improvement needed, the mobile apps need to go through some changes.

3.7 Key Milestones

N O	Deliverables	Schedule (Week)
1	Title selection	2
2	Proposal	3
3	Project approval	4
4	Literature review / Problem Identification and Feasibility Study	5
5	Market survey and requirement gathering	8
6	Process and system modeling	9
7	Interface design	10
8	Interim report submission	11
9	Proposal Defense	13
10	Mobile Application Development	15-21
11	Completion of mobile application development	22
12	Testing	22-25
13	Viva	26-27
14	Submission of project dissertation	28

Figure 3: Milestone

3.8 Gantt Chart

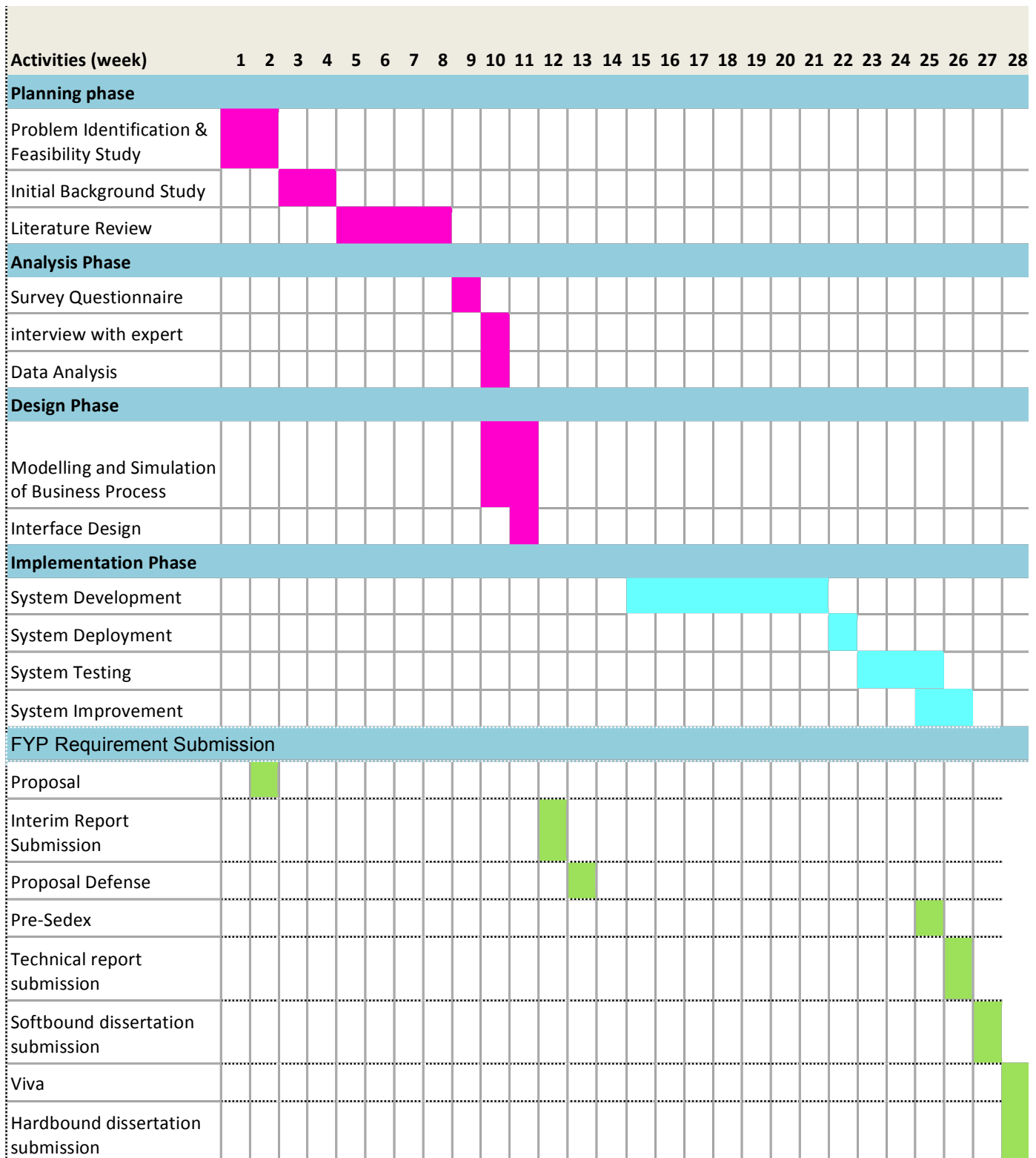


Figure 4: Gantt chart

CHAPTER 4: RESULT AND FINDING

4. Result and Findings

4.1 Data Compilation

As mention in research methodology, author has conducted several methods in order to collect data. Throughout the research author have identified Wat location in Malaysia and others relevant information. Below table shows all the information, which has been collected.

Wat In Kedah	Wat in Kelantan	Wat in Perak	Wat in Pulau Pinang	Wat in Perlis
Wat Ratchakhiri	Wat Ariya Khiri	Wat Mekprasit	Wat Buppharam	Wat jejawi
Wat Boonyaram	Wat Bang Takwa	Wat Intrawas	Wat Chaiya Mangalaram	Wat gua musang
Wat Barn Tas	Wat Champakeow	Wat Phodhiyaram	Wat Chanthraram	
Wat Buddhayapatitharam	Wat Chinpradith Tharam	Wat Siripunya Manggarama	Wat Phothicharentham	
Wat Chang Deng (terbiar)	Wat Chonprachumthat	Wat Sittawanaram		
Wat Chanhom	Wat Khok Seraya Vanaram	Wat Theppradittharam		
Wat Chong Charern Suddhaward	Wat Khosakaram			
Wat Damrongrattanaram				
Wat Jindaram	Wat Machimaram			
Wat Jitraram	Wat Maisuwankhiri			
Wat Kalai	Wat Phathumviharn			
Wat Lamdin				
Wat Lampam	Wat Phikulthong Vararam			
wat Nanai	Wat Phikulyai			
Wat Nikhodharam	Wat Phothiviharn			

Wat In Kedah	Wat in Kelantan	Wat in Perak	Wat in Pulau Pinang	Wat in Perlis
Wat Phikultharam	Wat Phothiviharn			
Wat Phothichediaram				
Wat Phrasimahapho				
Wat Phrathad Palelai	Wat Phothiyan			
Wat Phrathad Punya Suntharam	Wat Prachacinaram			
Wat Ratpradit	Wat Prachumthatchanaram			
Wat Saibonto	Wat Sukhontharam			
Wat Samagghiratanaram	Wat Uttamaram			
Wat Samosornrajanukpradit				
Wat Sanggararam				
Wat Seluang				
Wat Thai Charern				
Wat Thamkhiriwong				
Wat In Kedah	Wat in Kelantan	Wat in Perak	Wat in Pulau Pinang	Wat in Perlis
Wat Tutoi				
Wat Vibulvararam				
Wat Visutthipradittharam				
Wat Wanakrattanaram				

Figure 5: Wat in Malaysia

Apart from Wat locations, author also manage to collect basic concept of Buddhism and also compile all the relevant information pertaining Siamese Buddhism in Malaysia , below is the summary of basic Buddhism in Malaysia : Buddhism has been described as a very pragmatic religion. It does not indulge in metaphysical speculation about first causes there is no theology, no worship of a deity or deification of the Buddha. Buddhism takes a very straightforward look at our human condition nothing is based on wishful thinking, at all. Everything that the Buddha taught was based on his own observations of the way things are. Everything that he taught could be verified by our own observation of the way things is. In Buddhism there is a few component or main element, which is

The triple gem

1. *The Buddha - The self awakened one , the original nature of the heart*
2. *The Dhamma - The teaching , the nature of reality*
3. *The Sangha - The awakened community , any harmonious assembly , all beings*

The Four Noble Truths

1. *The Noble Truth of Dukkha - Stress , unsatisfactoriness , suffering*
2. *The Noble Truth of the casual arising of Dukkha , which is grasping , clinging and wanting The Noble Truth of Nirvana , the ending of Dukkha ,Awakening , Enlightenment , 'mind like fire unbound'*
3. *The Noble Truth of the path leading to Nirvana or Awakening*

All buddhist flow from the Four Noble Truth are particularly emphasised in the Theravada sect

The Four Bodhisattava Vows

1. *i vow to rescue the boundless living beings from suffering (link to 1st Truth)*
2. *i vow to put an end to the infinite afflictions of living beings (link to 2nd Truth)*
3. *i vow to learn the measureless Dharma -doors(link to the 4th truth)*
4. *i vow to realise the unsurpassed path of of the Buddha (link to the 3rd Truth)*

The Eight Fold Path

Right ,integral,Complete ,Perfected

1. *Right view ,understanding*
2. *Right attitude ,thought or emotion*
3. *Right speech*
4. *Right action*
5. *Right livelihood*
6. *Right effort ,energy and vitality*
7. *Right mindfulness or awareness*
8. *Right Samadhi 'concentration' , One pointless ,integration of ,or establishment in various consciousness*

The Five Precepts

Theravada Buddhism preserves the Buddha's teachings and conducts religious ceremonies mainly in the original Pali language. The five precepts are also recited in Pali, and their meanings are generally known to most Buddhists. In the following the original Pali text is given in italics, and the corresponding English translation is given side by side:

1. *Panātipata veramani sikkhapadam samādiyami: I observe the precept of abstaining from the destruction of life.*

2. *Adinnadana veramani sikkhapadam samādiyami: I observe the precept of abstaining from taking that, which is not given.*

3. *Kamesu micchacara veramani sikkhapadam samādiyami: I observe the precept of abstaining from sexual misconduct.*

4. *Musavada veramani sikkhapadam samādiyami: I observe the precept of abstaining from falsehood.*

5. *Suramerayamajjapamadatthana veramani sikkhapadam samādiyami: I observe the precept of abstaining from intoxicants that cloud the mind and cause carelessness.*

The refrain 'I observe the precept of abstaining from ...' which begins every precept clearly shows that these are not commandments. They are, indeed, moral codes of conduct that lay Buddhists willingly undertake out of clear understanding and conviction that they are good for both themselves and for society.

10 Paramitas

1. Generosity (dana)
2. Moral conduct (sila)
3. Renunciation (nekkhamma)
4. Wisdom (paññā)
5. Energy (viriya)
6. Patience (khanti)
7. Truthfulness (sacca)
8. Determination (adhitthana)
9. Loving-kindness (metta)
10. Equanimity (upekkha)

The Four sublime or Uplifted states

1. Metta - Friendliness, loving kindness
2. Karuna - compassion
3. Mudita - Joy, gladness
4. Upekkha - Equanimity

full development of this four states develops Ten Paramita

The Five power or Spiritual faculties

1. Faith, confidence
2. Energy effort
3. Mindfulness
4. Samadhi
5. Wisdom

The Five Hindrances

1. *Sense of craving*
2. *ill-will*
3. *Sloth and Torpor*
4. *Restlessness and Worry*
5. *Toxic doubt and the ruthless inner critics*

The Four bases or Frames of References of mindfulness

1. *Mindfulness of the body - Breath ,postures , parts*
2. *Mindfulness of Feelings ,sensation -Pleasant ,unpleasant and neutral*
3. *Mindfulness of states of consciousness*
4. *Mindfulness of all phenomena or objects of consciousness*

The Threes sign of Existence or Universal Properties

1. *Anicca - impermanent*
2. *Dukkha - Unsatisfactory , stress inducing*
3. *Anatta - Insubstantial or not self*

Besides that , author also have compile all the chanting audio into a sequences form. Chanting , in this context have been scattered through the internet and its complicate the user in finding it , because of that , author have compile the chanting audio into understandable sequences :

Morning chanting

Ratanattaya Vandana - Salutation to the Triple Gem
Pubbabhaganamakapatha - The Preliminary Passage for Revering
Buddhabhithuti - Praise to the Buddha
Dhammabhithuti - Praise to the Dhamma
Sanghabhithuti - Praise to the Sangha
Ratanattayappanagamatha - Salutation to the Triple Gem and Passages for
Dispassionateness
Samvegaparikittanapatha - Passages conducive to Dispassionateness

Evening chanting

Ratanattaya Vandana - Salutation to the Triple Gem
Pubbabhaganamakapatha - The Preliminary Passage for Revering
Buddhabhigiti - Hymn to the Buddha
Dhammanussati - Recollection on the Dhamma
Dhammabhigiti - Hymn to the Dhamma
Sanghanussati - Recollection on the Sangha
Sanghabhigiti - Hymn to the Sangha

4.2 Requirement Gathering

4.2.1 Survey

During this project, the author had conducted a survey method. The objective of the research is to gain an understanding of underlying reasons and motivations and also quantify data and generalize results from a sample to the population of interest. Through out this method, the problems that face by the user can be identify.

This survey is conducted via Google online questionnaire; author has distributed the questionnaire approximately to the 100 Gen Y of Siamese community in order to bring up any problem that currently facing. Author has design 8 questions to be answered by the target user. The questionnaires are distributed through Facebook and Email. Below are the results of the surveyed questionnaire.

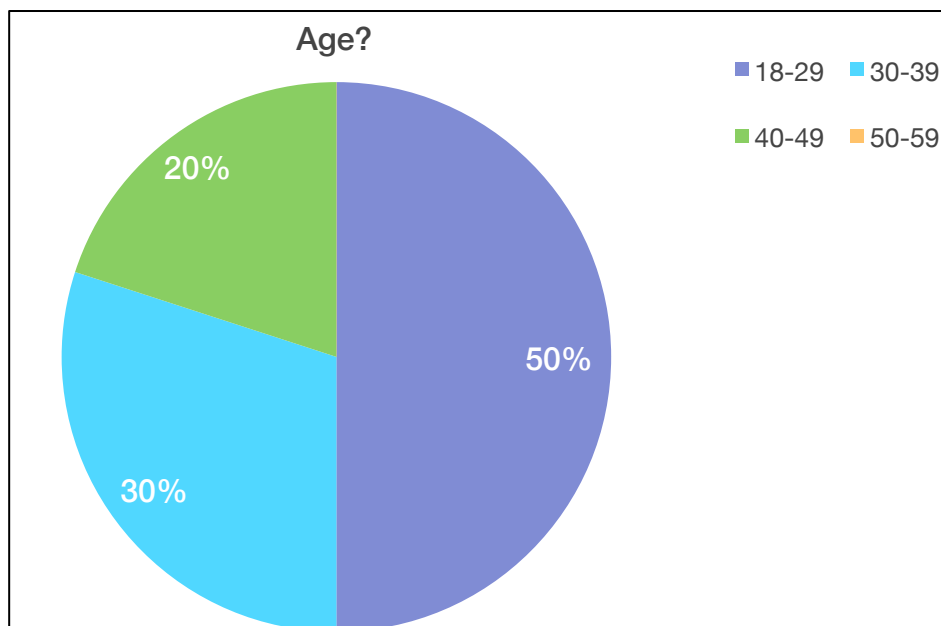


Figure 6: Age of surveyed respondent

Based on the pie chart above, the most respondent is Gen Y which the age is 18-29 years old.

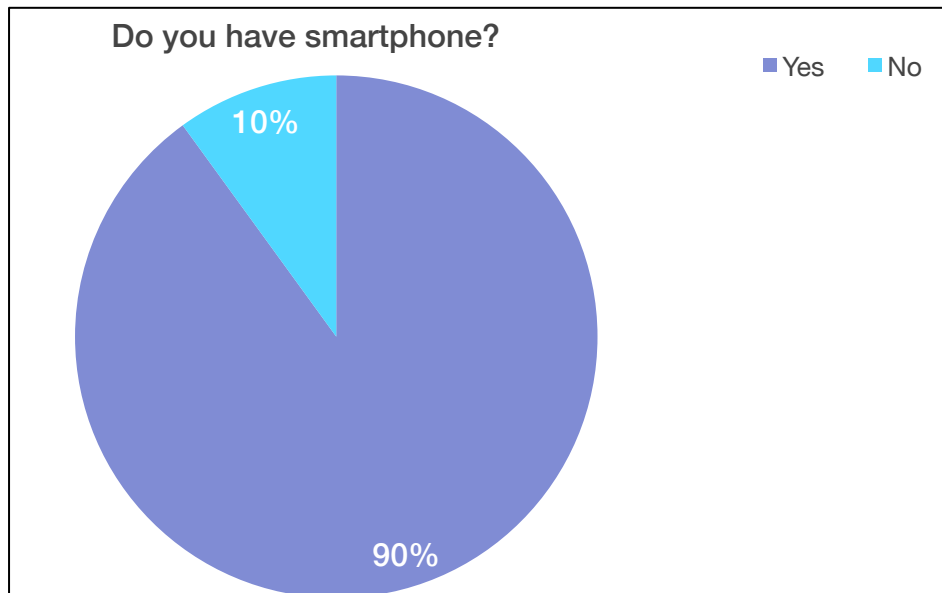


Figure 7: The numbers of targeted user who have smartphone

Based on the figure 7 the numbers of targeted user who own smartphone is 90% and do not own smartphone is 10%. Therefore, author can conclude is most of the Siamese Generation Y own a smartphone and some of the Siamese which age range 40 above does not really own a smartphone. One of the reasons of the result is the increase of the Gen Y in Siamese community that keen towards the technology. Besides that, the prices of smartphone are now mostly affordable.

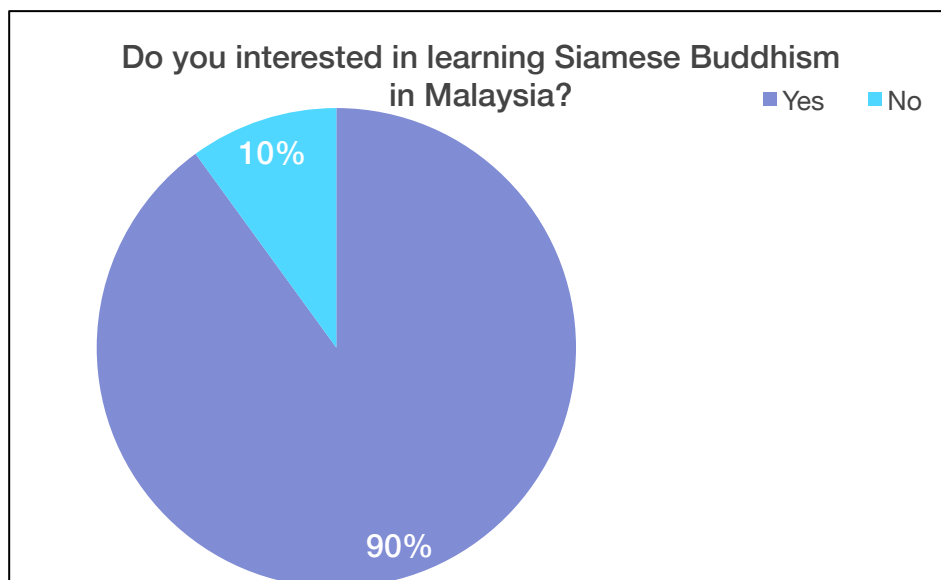


Figure 8: The number of people who interested in learning Siamese Buddhism.

Based on the figure illustrated above, the result showing a positive implication as 90% of respondent interested in learning Siamese Buddhism. Another 10% of respondent did not interested in this learning due to some personal matter.

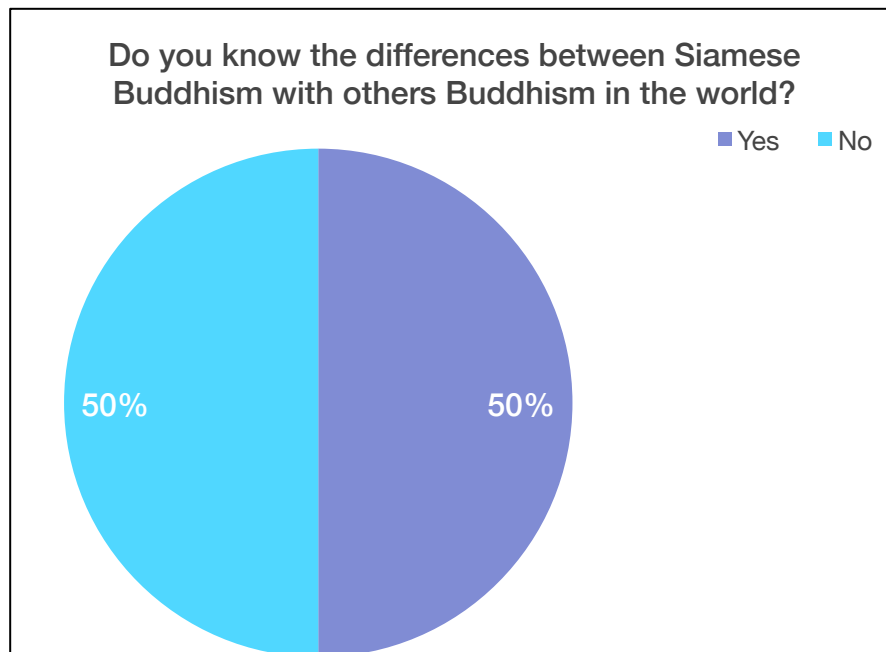


Figure 9: The numbers of targeted user that knows the differences between Siamese Buddhism with other Buddhism in the world.

Figure 9 show that, half of targeted user (50%) knows there are differences in between Siamese Buddhism with other sect of Buddhism in the world and 50% of them don't. The increase of Gen Y in Siamese community have influence the result as the Gen Y of Siamese Community start to migrate out from their hometown to a city and lack of exposure from the Gen X (of Siamese community) have given a huge influences towards the result. While another 50% knows about the differences.

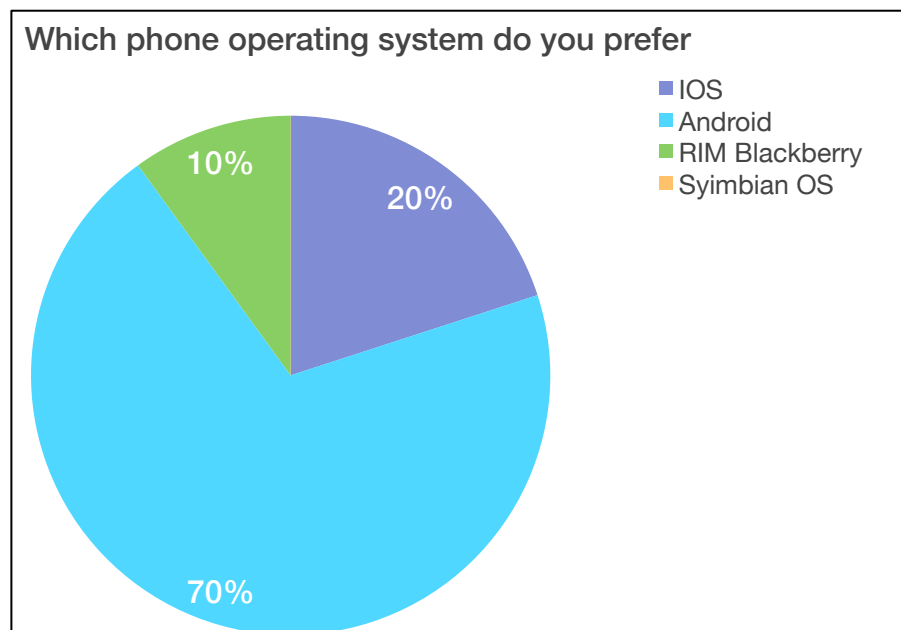


Figure 10: Most preferred operating system.

The above figure shows that Android have been the most preferred operating system followed by IOS, RIM Blackberry and Symbian OS. As conclusion, Android have been a common in Siamese community as their smartphone based. Through this result, author able to have a clearer view on which platform will be used for the mobile application development.

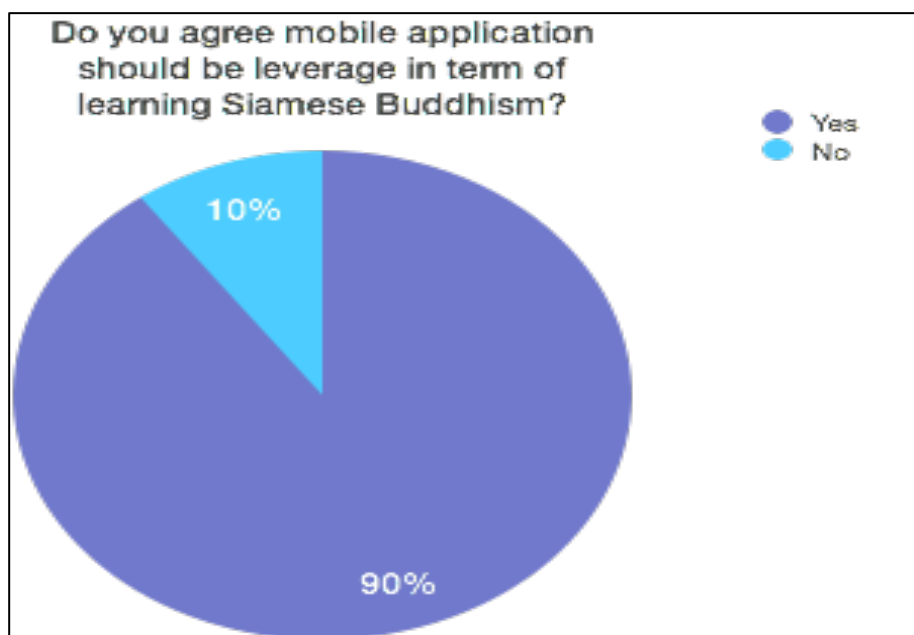


Figure 11: Leveraging Mobile Application in learning religion

In figure 11, it shows that most of the targeted user agrees upon leveraging mobile application in the learning religion. By leveraging the mobile apps in learning Siamese Buddhism, it can provide the conveniences to the user to learn the religion. Some of them disagree because they prefer web rather than mobile apps.

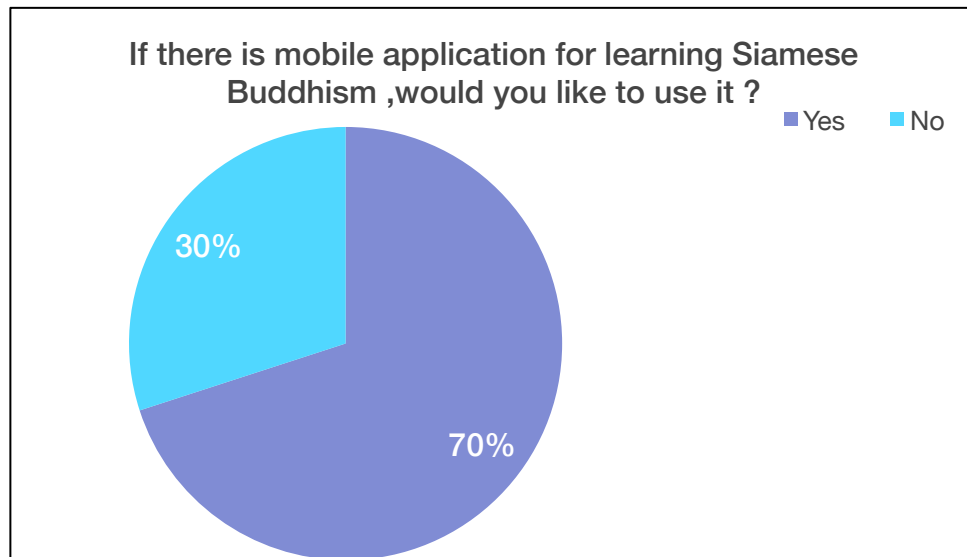


Figure 12: Rate of mobile application for learning Siamese Buddhism would be use.

In Figure 12, it show most of the user surveyed agree to use the mobile application for learning Siamese Buddhism. With the Increasing of smartphone in the market have influences most of user on using this application. For the group of disagree, they voice out about they have no free time to use the apps.

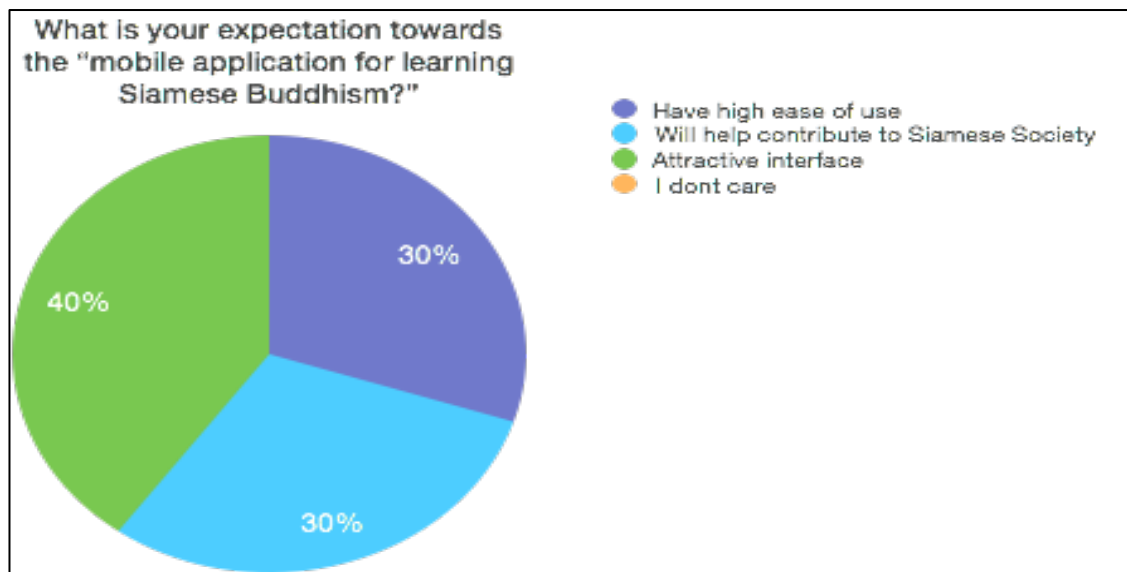


Figure 13: Expectation towards the Mobile Application for Learning Siamese Buddhism

Based on the figure illustrated above, shows that 40% of expectation on the apps that will give the contribution to the Siamese society. 30%, choose the mobile apps that have high ease of use and another 10%, 20% choose attractive interface and "i don't care" respectively.

4.2.2 Interview Result

For the qualitative method, author use interview as the method for data gathering. Author has interview an expert - Mr Osot Prayun which is the president of Siamese in Malaysia. In that interview a few question were ask. Throughout that interview , author able to identify, most of kids or Gen Y nowadays have lack knowledge regarding to the Siamese Buddhism . Based on interview with Mr Osot, he said that most of kids nowadays reluctant to go to Wat and does not concern about the religious teaching.

Besides that, author also has voice out the question on necessity on having Wat locator in the mobile apps. Based on Mr Osut opinion, the Wat locator is necessary, as most of Gen Y nowadays does not know the exact location of Wat in Malaysia. With the Wat locator in Learning Siamese Buddhism Mobile Apps, it will enable them to search for the Wat easily. Apart from that, it will drive Gen Y of Siamese to perform prayer at Wat rather than at home. Another point that mention by Mr Osot, if generation Y nowadays

have lack of exposure towards that religion teaching, the negative things such as criminal cases will be increase. With the learning using mobile apps, Gen Y might take their own initiative to download and use the apps as most of Gen Y of Siamese has smartphone. From the interview itself, author find out that, the knowledge about the Siamese Buddhism start to diminish if there are no people who concern to learn it deeply. That is why, Siamese Buddhism knowledge needs to be documented in term of mobile apps to ease the use of the user itself.



Figure 14: Wat

4.3 Design

4.3.1 Use-Case diagram

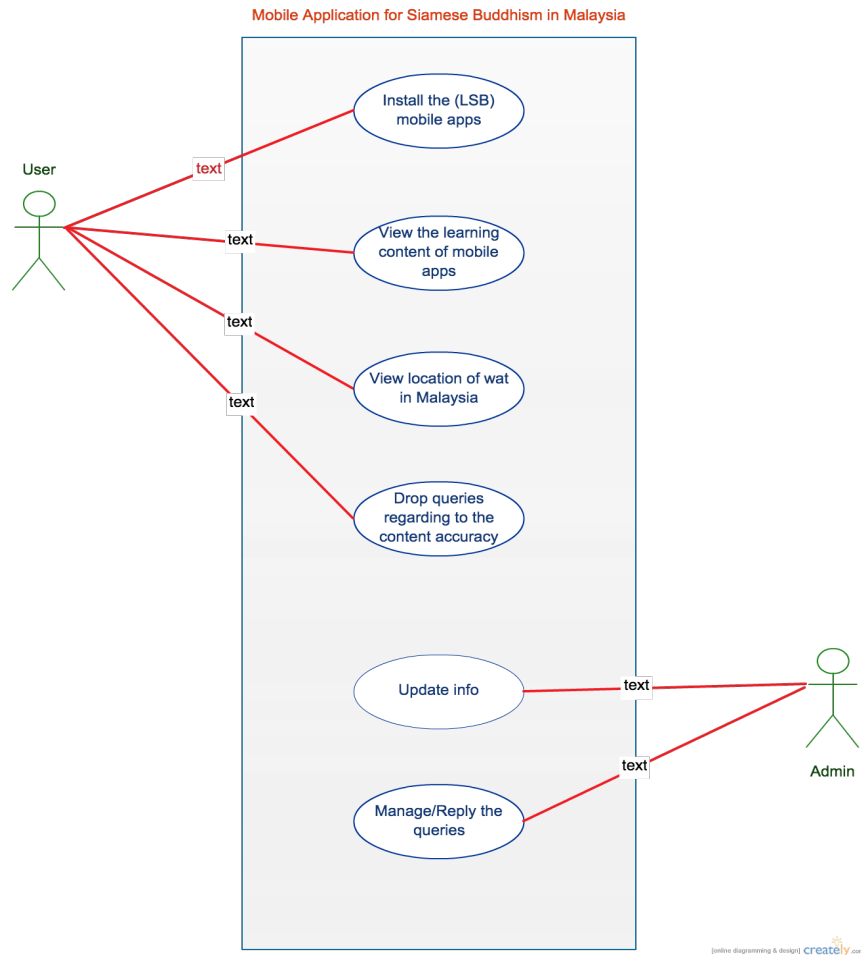


Figure 15: Use-Case diagram

Based on the diagram illustrated above, two actors involve which is user and admin. For the users part , they can install the mobile apps ,view the content of mobile application ,view Wat locations and also drop any queries if they are having problem with content accuracy. As illustrated in use case above, admin able to update info and reply the queries drop by the users.

4.3.2 Activity Diagram

Activity diagram in this project can be derive into two major components which is User point of view and Admin point of view .Below diagram illustrated the following components.

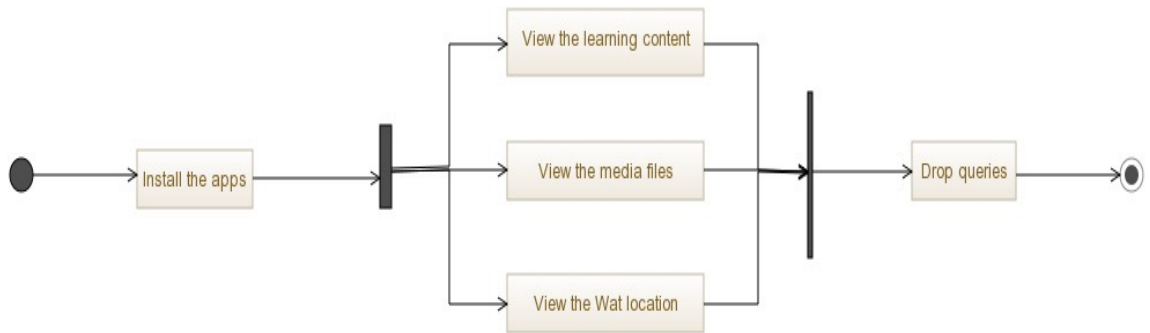


Figure 16: User point of view

Based on figure dictate above, showing that activity diagram from user point of view. First and foremost user need to install the apps then, they will be able to view the learning content, view the media files and view Wat locations. After the 3actions are done then they can perform drop queries



Figure 17: Admin point of view

From the admin point of view, admin only manage to update/delete the content and reply all the queries drop by the users

4.3.3 Tools and Equipment

Hardware

- MacBook Pro
- Android Smartphone (Lenovo tab 2) for mobile application testing.

Software

- AndroidStudio that support java
- AppInventor used to design the interface of the mobile application and screenshot before the mobile application is being developed.

Programming Language

- Java will be used to develop the mobile application for customer.
- SQL will be used to develop the prototype database.

4.3.5 Prototype

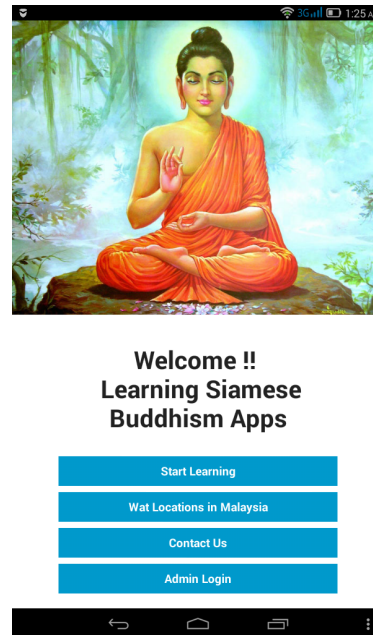


Figure 18: Main interface of mobile application

Figure 18 shows the main interface of the mobile application. The application can be categorized into 3 main functions as list below:

- Start learning the Siamese Buddhism
- Inquiry
- Wat location in Malaysia

The first function is the start learning the Siamese Buddhism. This function allow user to start the learning of the Siamese Buddhism. If this particular tab is click then it will direct user to the learning content which show in figure 16.

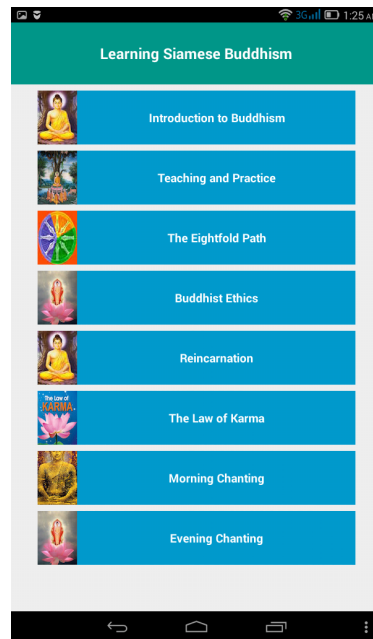


Figure 19: Learn Siamese Buddhism content page.

In this page, user will be displayed with an interface of Learning Siamese Buddhism content, which is listed in the figure above. From learning Siamese Buddhism content page user able to navigate to all of the tab provided which if they click on particular tab, they will be navigate to the other page as showing below:

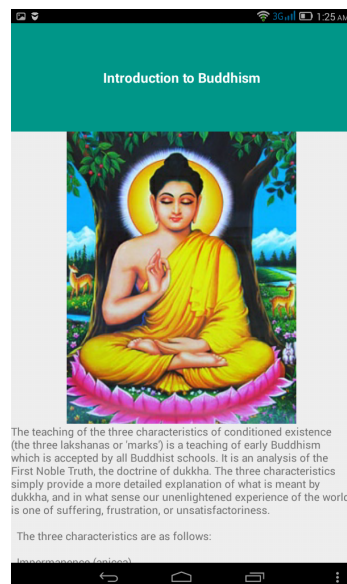


Figure 20: Introduction to Buddhism page

Introduction to Buddhism pages provide information pertaining to what is Buddhism is all about and also brief overview of Siamese Buddhism.

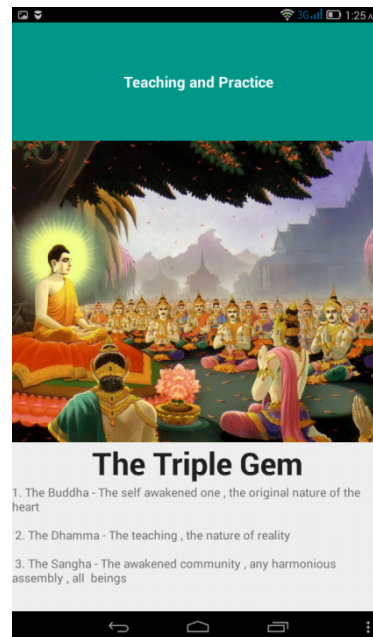


Figure 21: Teaching and Practices page

Teaching and practices page injecting info with a main component of Buddhism. The main element in this context can be define as the pillar of the Buddhism teaching.



Figure 22: Eight - Fold Path page

The Eight-Fold Path explaining about the Four Noble Truths - the first of the Buddha's teachings. All the teachings flow from this foundation.

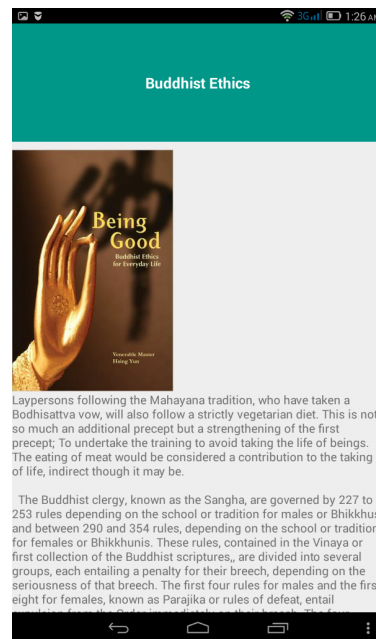


Figure 23: Buddhist Ethics

Buddhist ethics emphasize on the ethical and moral principles are governed by examining whether a certain action, whether connected to body or speech is likely to be harmful to one's self or to others and thereby avoiding any actions which are likely to be harmful. In Buddhism, there is much talk of a skilled mind. A mind that is skillful avoids actions that are likely to cause suffering or remorse

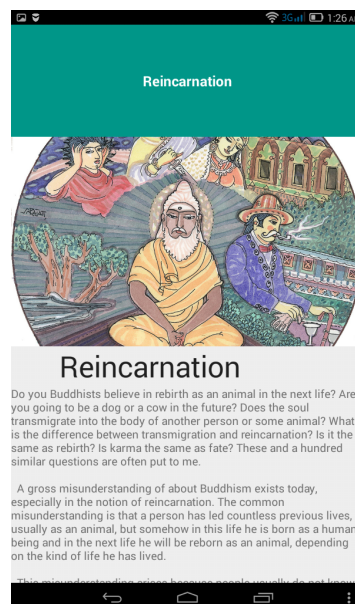


Figure 24: Reincarnation

The reincarnation lesson emphasize on rebirth which been one of the Buddhist believes. Reincarnation is not a simple physical birth of a person, its link with the Karma law, which simply put “what you give, you will get back”.

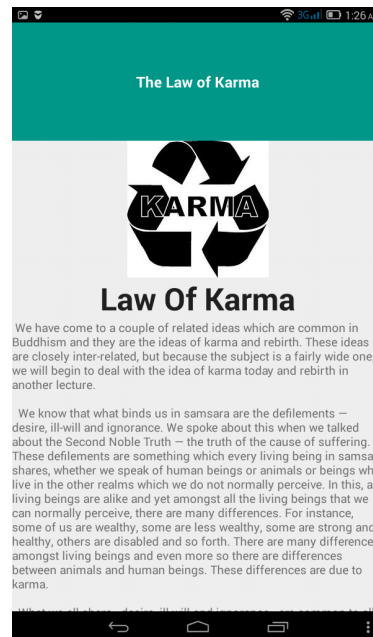


Figure 25: Law of Karma

Karma in Buddhist one of the component, it operates in the universe as the continuous chain reaction of cause and effect. It is not only confined to causation in the physical sense but also it has moral implications. 'A good cause, a good effect a bad cause a bad effect' is a common saying. In this sense karma is a moral law

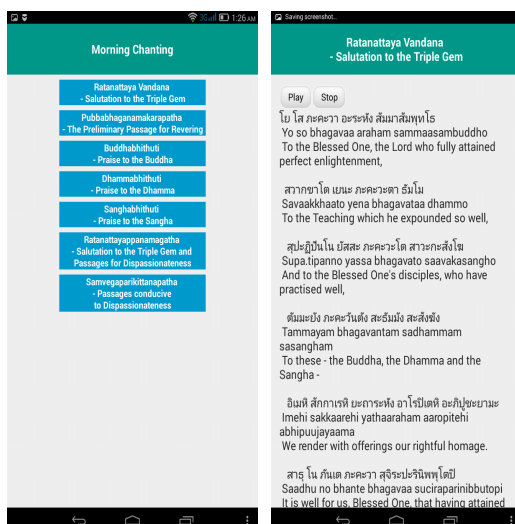


Figure 26: Morning Chanting



Figure27: Evening Chanting

In Buddhism, Morning chanting and evening chanting can be said as routine prayer that needs to be perform every day. This pages, display all the chanting script with guide of the audio of chanting.

As shown in figure 18-27, is the page of each learning content for Learning Siamese Buddhism apps. Another functionality that has been embedded in this app is Malaysia's Wat Locator. In that page, user will be able to navigate to respective Wat in Malaysia by tapping the point of Wat in the map.

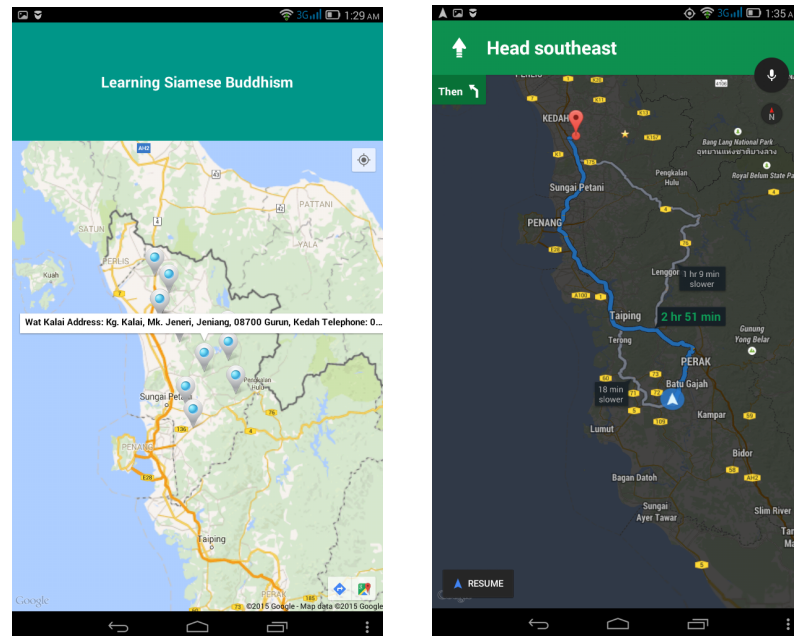


Figure 28: Wat location in Malaysia

Wat location as stated in figure above is the second main functionality for these apps. Through this function, user able to view each map location for Wat in Malaysia. This function will give a huge impact to the users who searching for Wat while they are travelling. Some of Siamese community migrates out to the others states, via this functionality user able to locate the nearest Wat around them.

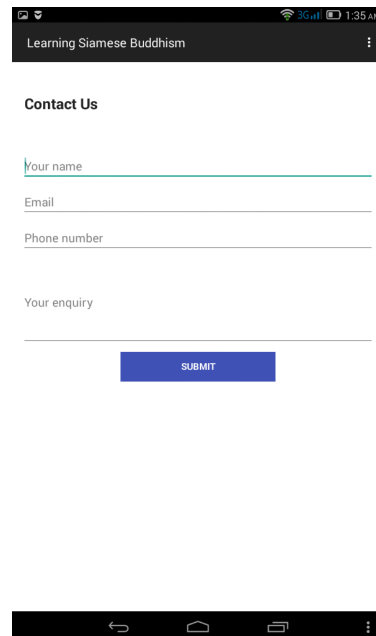


Figure 29: Contact us page

Besides that, if user feel that the accuracy of the content is dissatisfied then, user can make use the second function which is “contact us” as contact medium. In this page, user needs to fill up their name, email address, phone number and their inquiry of what they want to voice out. After the “submit” but is click then data will go to the application database which only admin can view and delete the inquiry. This function allows admin to check any feedback or comment from the user pertaining to the Siamese Buddhism.

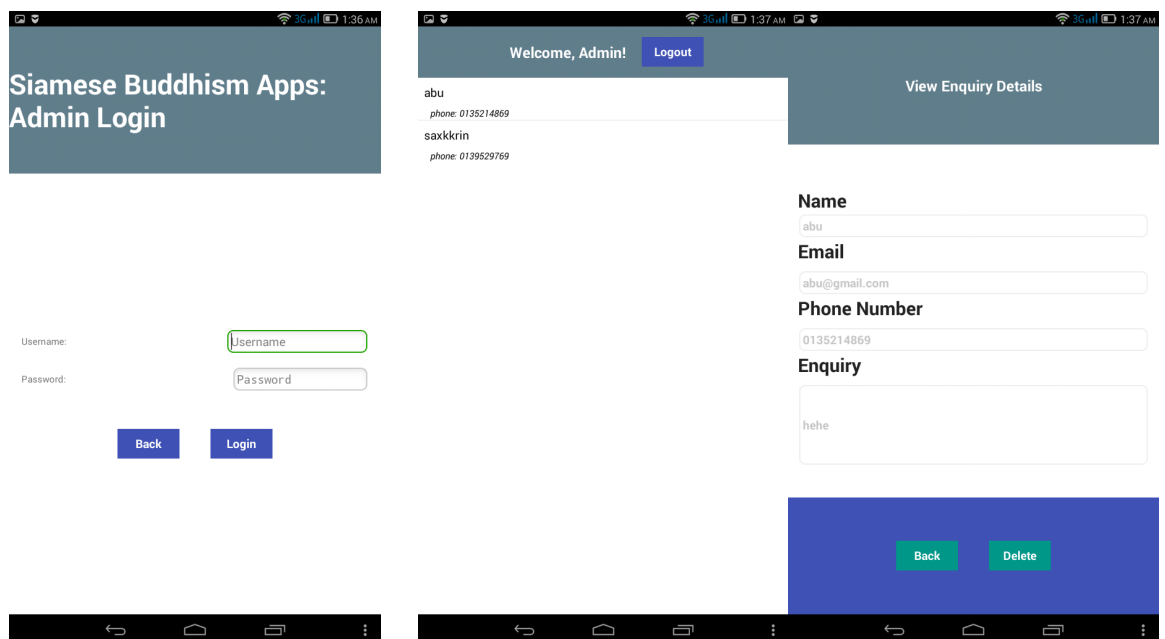


Figure 30: Admin login page

4.4 Validate and testing

4.4.1 Functional Testing

Component	Expected Function	Testing frequencies	Testing results		Remark
			Success	Failure	
Start learning Button	Navigate to Learning content page	20	20	0	
Intro to buddhism button	Display info about Introduction to Buddhism	20	20	0	
Teaching and practices button	Display info about Teaching and practices	20	20	0	
The 8fold path button	Display info about 8fold path	20	20	0	
Buddhist ethics button	Display info about Buddhist ethics	20	20	0	
Reincarnation button	Display info about reincarnation	20	20	0	
The law of karma button	Display info about Karma	20	20	0	
Morning/evening chanting button	Display chanting script	20	20	0	
Play/Stop audio button	Play audio corresponding to chanting script	20	19	1	Coding error
Wat locations button	Navigate to the Google map	18	18	0	

Navigate button	Navigate to the choosing Wat	18	17	1	No internet connections
Current location button	Navigate to the user's current location	18	16	2	Google server not responding and no internet connection
Show map button	Show google map	18	18	0	
Contact us button	Navigate to inquiry page	25	25	0	
Submit button	Send inquiry to the database	25	24	1	Failure caused no filling information
Admin login button	Navigate to login button	25	25	0	
Back button	Return home	25	25	0	
login button	Login to the admin page	25	25	0	
Delete button	Delete the inquiry that submitted by user	25	24	1	No information were inserted
Back button	Return home	25	25	0	

Figure 31: Functional testing

4.4.2 User Acceptance Testing

The user testing is done basically for the evaluation of user .The main features that is being tested for the targeted user for the customer mobile application is :

1. Functionality performance
2. Mobile apps GUI design
3. Ease of use
4. Help user in findings the Wat location
5. Easy learning

10 users have been selected to perform the testing; most of the users are UTP's Siamese student, which range from 18-22 years old. Targeted users are provided with the application setup on their mobile. After the testing, users required to fill the questionnaire as shown in the figure below

The first part of testing is to test the functionality performance. User is expected to experience themselves with the performance of each of the functionality. After this test, user will be asked whether the performance is high, moderate or low.

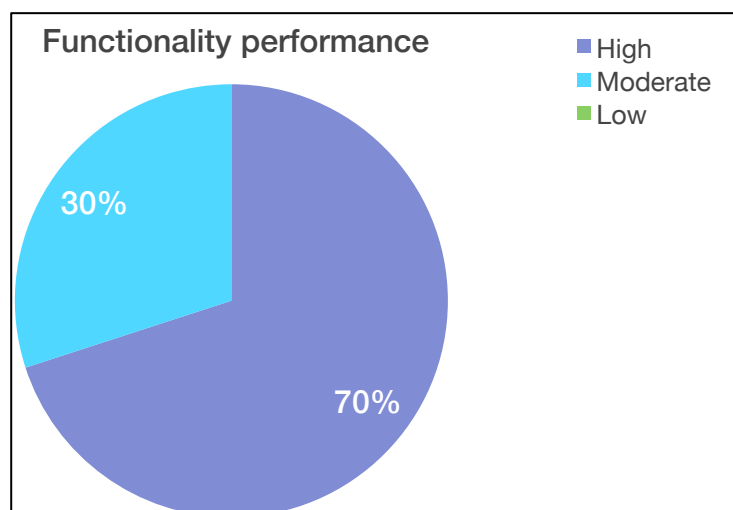


Figure 32: Question 1

There are more than half of the user believe that this application have high functionality Performance. As stated in figure 34, 70% user says that the functionality performance is high as when they click every function the speed of apps navigate to others apps is fast.

While for the 30%, they said that, the Wat location functionality have consume a little bit of time in navigating to the particular Wat which they selected.

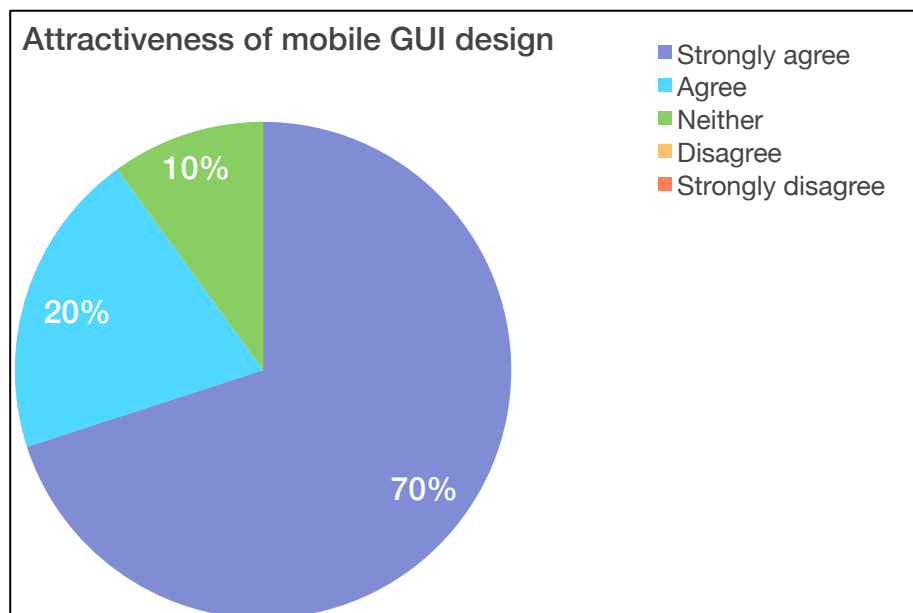


Figure 33: Question 2

In figure 33 above, the evaluation results shows that 70% of user said the mobile application GUI is very attractive while another 20% and 10% showing agree and neither respectively .Its shows that , the mobile application GUI is very attractive and the design it selves attract user to use it .

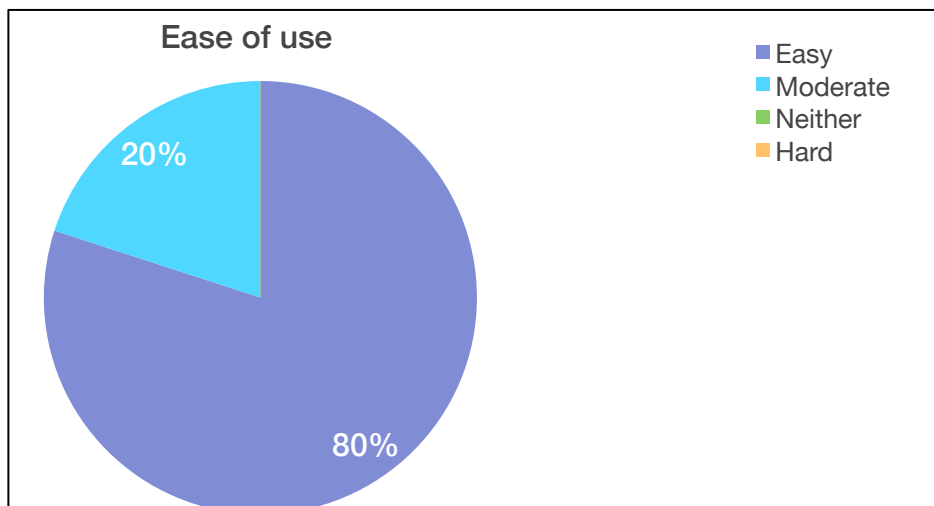


Figure 34: Question 3

Based on the result above, showing 80% of user gave easy impressions for this mobile app, while another 20% voted moderate because of they are using IOS platform and they are not familiar with the android interface.

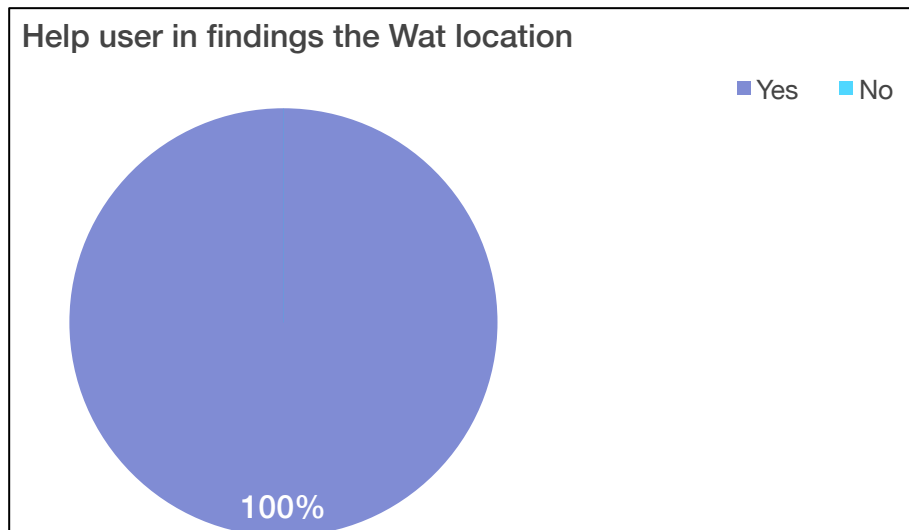


Figure 35: Question 4

It is found that all of user agrees that the mobile applications have helped the user to find the Wat that they are searching for.

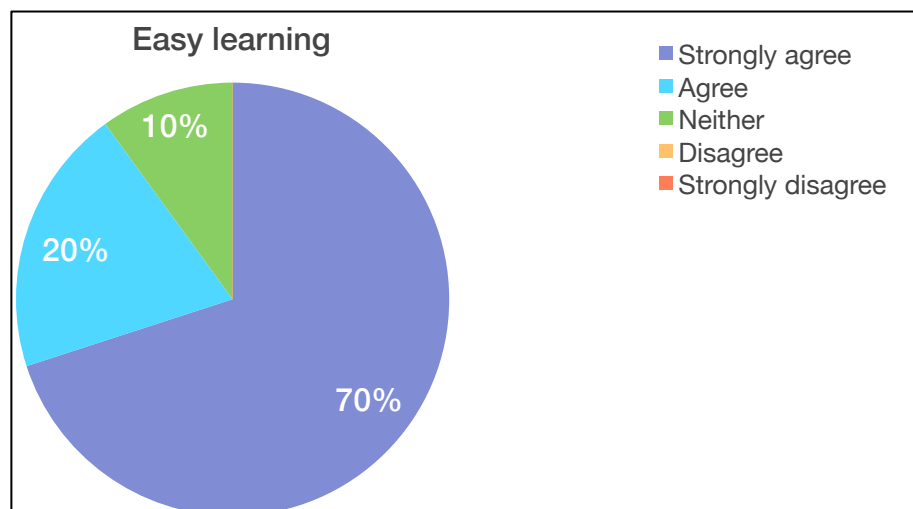


Figure 36: Question 5

As showing in the figure above, 70% and 20% voted strongly agree and agree respectively while another 10% voted neither. In this case, they might not have knowledge in reading in Thai language because some of the content are in Thais language.

CHAPTER 5: CONCLUSION AND RECOMMENDATION

5. 1 Conclusion

As conclusion this mobile apps will be able to help the targets user to easily gain knowledge in Siamese Buddhism in Malaysia. With the limited sources in Malaysia, Mobile application for learning Siamese Buddhism will be able to help in term of efficiency of learning the Siamese Buddhism. Learning Siamese Buddhism apps also will create a new ways of learning which is mobile learning rather than using the manual ways. With the compilation of the relevant information pertaining to Siamese Buddhism in Malaysia, this content can be accessible anytime and anywhere.

In the perspective of social and technology, this application may help in term of advertising the minority race in Malaysia, which is Siamese to whole world via the application. All of the research activities include literature research, quantitative survey, interview, designing new process and the development of prototype are related and strive to achieve the objectives of the research

5. 2 Recommendations

As for the recommendation to be made for this research, the Wat locations can be improve in future as for now, the location only in static mode so its require a manual picking from user in order to navigate to the particular Wat in Malaysia. Perhaps in future, the Wat location can be improve by implement just allowing the user to tap the search nearby Wat.

Other than that, researcher would like to further improve on the interface part as for now, researcher using android studio, which have limited sources of creative interface that can be use in the apps. Researcher might recommend newer tools, which have more interface customization to develop the apps

Furthermore, research also might consider in integrating with the existing ERP system such as Oracle system. The purpose of doing this is to accommodate the information of the ERP along with the information in this project database. That will provide more value to the user and improve the usability of this integrated system.

Lastly, researcher also believes that this work can be extending to other industry such as tourism. As most of the Siamese Buddhism have their own uniqueness which can be extent for the tourist to visit hence expanding the minority to the rest of the world. This application can be embedded in to tourism application. As tourisms are using the apps, at the same time they also can browse through the content of the Siamese Buddhism.

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APPENDIX

Survey on "Mobile Application For Learning Siamese Buddhism in Malaysia"

Age ?

Do you have smartphone?

- ☐ Yes
- ☐ No

Do you interested in Learning Siamese Buddhism in Malaysia ?

- ☐ Yes
- ☐ No

Do you know there are differences between Siamese Buddhism with others Buddhism in the world ?

- ☐ Yes
- ☐ No

Which phone Operating System do you preferer ?

- ☐ IOS
- ☐ Android OS
- ☐ RIM Blackberry
- ☐ Symbian OS

Do you agree Mobile Application should be leverage in term of learning Siamese Buddhism?

- ☐ Yes
- ☐ No

If there is mobile application for learning Siamese Buddhism , would you interested to use it ?

- ☐ Yes
- ☐ No

what is your expectation towards the "Mobile Application for Learning Siamese Buddhism"?

- ☐ Apps that have high ease of use (High usability)
- ☐ Apps that will the help the contribution to the Siamese society
- ☐ Attractive interface
- ☐ I dont care